

**ABSTRACT**

A method of determining a position of a target region in a medical procedure includes acquiring an input image of a target region, enhancing a feature of the input image, registering the input image with a template, and

5      determining a position of the target region in the input image based on the registering. A method of monitoring a position of an object includes providing a reference image of the object, acquiring a first image of the object, determining a first composite image based on the reference image and the first image, and determining whether the object has moved based at least on the first composite

10     image.